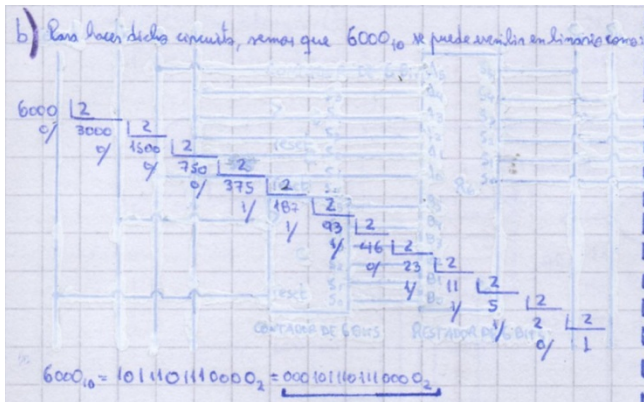


## Ejercicio 23b:



En base a este resultado noto que para la entrada  $e_{15}, e_{14}, e_{13}, e_{12}, e_{11}, e_{10}, e_9, e_8, e_7, e_6, e_5, e_4, e_3, e_2, e_1, e_0$  tengo que la salida  $S = \overline{e_{15}} \cdot \overline{e_{14}} \cdot \overline{e_{13}} \cdot e_{12} \cdot \overline{e_{11}} \cdot e_{10} \cdot e_9 \cdot e_8 \cdot \overline{e_7} \cdot e_6 \cdot e_5 \cdot e_4 \cdot \overline{e_3} \cdot \overline{e_2} \cdot \overline{e_1} \cdot \overline{e_0} =$

$$= \overline{e_{15}} \cdot \overline{e_{14}} \cdot \overline{e_{13}} \cdot \overline{e_{11}} \cdot \overline{e_7} \cdot \overline{e_3} \cdot \overline{e_2} \cdot \overline{e_1} \cdot \overline{e_0} \cdot e_{12} \cdot e_{10} \cdot e_9 \cdot e_8 \cdot e_6 \cdot e_5 \cdot e_4 = (\overline{e_{15}} + \overline{e_{14}}) \cdot (\overline{e_{13}} + \overline{e_{11}}) \cdot (\overline{e_7} + \overline{e_3}) \cdot (\overline{e_2} + \overline{e_1}) \cdot \overline{e_0} \cdot e_{12} \cdot e_{10} \cdot e_9 \cdot e_8 \cdot e_6 \cdot e_5 \cdot e_4$$

(ley de Morgan) =  $((\overline{e_{15}} + \overline{e_{14}}) + (\overline{e_{13}} + \overline{e_{11}})) + ((\overline{e_7} + \overline{e_3}) + (\overline{e_2} + \overline{e_1})) \cdot \overline{e_0} \cdot e_{12} \cdot e_{10} \cdot e_9 \cdot e_8 \cdot e_6 \cdot e_5 \cdot e_4$

(ley de Morgan) =  $((\overline{e_{15}} + \overline{e_{14}}) + (\overline{e_{13}} + \overline{e_{11}})) + ((\overline{e_7} + \overline{e_3}) + (\overline{e_2} + \overline{e_1})) \cdot \overline{e_0} \cdot e_{12} \cdot e_{10} \cdot e_9 \cdot e_8 \cdot e_6 \cdot e_5 \cdot e_4$

(ley de Morgan) =  $((\overline{e_{15}} + \overline{e_{14}}) + (\overline{e_{13}} + \overline{e_{11}})) + ((\overline{e_7} + \overline{e_3}) + (\overline{e_2} + \overline{e_1})) \cdot \overline{e_0} \cdot e_{12} \cdot e_{10} \cdot e_9 \cdot e_8 \cdot e_6 \cdot e_5 \cdot e_4$  (definición de NOR). Con esto queda el módulo como:

